Customizing strategic planning model for Iran’s cement industry

Mohammad Zarkesh
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1) Introduction

Managers always have an eye on future to identify actions they should take in order to outperform their competitors. A systematic approach to identifying these actions is called strategic planning. Since industries are different by their natures, some issues should be considered when a strategic planning model is applied to a specific industry. Having more than twenty years of managerial experience in Iran’s cement industry, the author of this thesis aims to define and run a study to customize a strategic planning model according to local considerations of Iran’s environment.

1-1) Report background

Iran is a developing country with an average GDP growth rate of 5.5 to 6.5 percent. According to the approved vision of country this rate should increase to more than 8% and continue in next 2 decades. Although this goal has not been realized yet, sovereign attempts have been focused on realizing it. So, investments have been made in different industries and numerous projects, especially in infrastructure section have been run. The trend is positive and the number of construction projects will continue to grow. That means a growing demand for fundamental materials like steel and cement. Having rich natural resources and mines, Iran has a great potential for being one of the major regional steel and cement producers.

The history of Iran’s cement industry goes back to about 70 years ago. The first cement company in Iran was established at that time with a capacity of 250 MT/Day\(^1\) or 400,000 MT/Year (1). Now, total production of this product has been increased to more than 50 million MT, and more than 40 factories are active in this industry. By finishing current under construction projects the production capacity will grow to 70 million MT in near future.

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\(^1\) Metric Ton
1) Introduction

Throughout last 3 decades, since Iran's 1979 revolution, cement market has always experienced lack of supply and suppliers have been able to sell their products easily. Because of strategic importance of cement and possible effects of price increase on projects' progress, government has tried to control the market during these years. The controls are imposed by setting some limitations on cement trading. Pricing and rationing are 2 main mechanisms used for this purpose. These policies were not successful and finally led to a black market which was not beneficial neither to producers nor end customers.

At the same time, the government took some steps to promote investments in this industry. A set of financial and non-financial incentives were considered for this aim. No one was as effective as low-interest loans which were available easily to industry players. These incentives worked well and caused initiation of many cement production projects. These projects gradually start their production. It's predicted that in less than one year the supply deficit will be eliminated and in near future (less than 3 years) the market will face an oversupply.

But that is not the only important issue of this industry. Most of cement companies use old technologies for production and their production processes are not efficient enough and consume notable amount of electricity. Other than it, pricing has caused a big problem. At current prices cement factories are not able to remain competitive for a long time. Actually, cement companies show profits in their financial statements because they use historical prices in calculating depreciation. If the replacement costs of machineries were considered in calculating production costs, the profitability of old factories would decrease so that the production would not be feasible anymore (i).

This industry encounters several environmental changes during next two years. These changes will alter the market conditions considerably. First, production capacity will pass the market demand, and consequently rivalry among competitors will grow. Second, pricing and rationing will be eliminated because of government's overall policy to reduce its interferences in economy. Third, as a part of economy liberation program, subsidies on
energy and electricity will be reduced in near future and will eventually be eliminated.

Although all pre-mentioned changes could have serious impacts on market and competition, the most important one is certainly the paradigm shift that occurs in this industry from a production-oriented paradigm to customer-oriented paradigm. This paradigm shift makes it inevitable for industry’s manager to rethink about their existing strategies and revise and redefine those strategies according to new competition environment.

1-2) Problem discussion, purpose and research questions

Whilst the concept of strategy can be traced to early Chinese military strategy (Sun Tzu c500BC) business theorists have identified it within theory from around the 1960's (Ansoff, 1980; Ackoff, 1983). A company’s strategy consists of the combination of competitive moves and business approaches that managers employ to please customers compete successfully, and achieve organizational objectives. (2)

But, how is strategy formulated? Or how can the best strategy be reached? There is no clear answer for these questions. “We are the blind people and strategy formation is our elephant’ Mintzberg (3) says. Since no one has had the vision to see the entire beast, everyone has grabbed hold of some part or other and “railed on in utter ignorance” about the rest.

There are different approaches to strategy formulation suggested by scholars and researchers. Mintzberg summarizes them in ten schools of thought, and two major paradigms: prescriptive and descriptive (3). Barbuto (4) differentiates 5 approaches to strategy making. Hart (5) introduces 5 different ways to designing an organization’s strategy. They all believe that each of their suggested approaches works better in a certain context. The context could be defined by different parameters like complexity of environment or production process, organization’s size, and its development stage in business lifecycle.

Strategic planning is a way to strategy design. It is a systematic planning process involving a number of steps that identify the current status of the
association, including its mission, vision for the future, operating values, needs (strengths, weaknesses, opportunities, and threats), goals, prioritized actions and strategies, action plans, and monitoring plans (6). Being a member of prescriptive approaches, it is more effective in large firms with low-medium degree of process complexity which work in a relatively stable environment.

Applying Strategic planning in organizations has positive consequences. Greenley, points out there are some basic reasons why companies need strategic planning. First, it should improve the performance of companies. Prescriptive strategic management theory stresses the planning of a mission, the setting of objectives (including performance objectives), and the implementation of strategies and control systems to ensure the objectives are achieved. Second, strategic planning could lead to indirect improvements in performance by improving the effectiveness of management throughout an organization. Such benefits include process advantages, such as the ability to identify and exploit future marketing opportunities, personnel advantages such as the encouragement of a favorable attitude to change, and the view that strategic planning keeps the company synchronized with the external environment so that changes can be adapted to accordingly. (7)

There is no one perfect strategic planning model for every organization. Each organization ends up developing its own nature and model of strategic planning, often by selecting a model and modifying it as they go along in developing their own planning process. The value of a model is that it serves as a logic chart to guide the process. A model not only permits organizational clarity but also conserves workload by focusing attention on the most important planning activities and processes. An organization might choose to integrate the models, e.g., using a scenario model to creatively identify strategic issues and goals, and then an issues-based model to carefully strategize to address the issues and reach the goals. (8)

This thesis aims to develop a strategic planning model for a typical Iranian cement company. The value of a model is that it serves as a logical chart to guide the process. A model not only permits organizational clarity but also conserves workload by focusing attention on the most important
planning activities and processes (9). The basic research question is clear and that is “How a strategic planning model can be adapted to the specific situation of an Iranian cement company by finding common features of their external and internal environment?”. The author tries to find the answer of this question throughout the study process.

Considering that strategic planning has four major steps covering external analysis, internal analysis, setting goals, and formulating strategies; research questions should clarify how a strategic planning model differs from one industry to another. The following 8 questions were determined as research questions of the thesis.

1) Introduction

**RQ1:** What are the dominant economic traits of Iran’s Cement Industry?

**RQ2:** What are the major driving forces of Iran’s Cement Industry?

**RQ3:** What are the critical success factors of Iran’s Cement Industry?

**RQ4:** What performance measures can be used for evaluating the results of typical Iranian cement company?

**RQ5:** What does a typical cement company’s value chain look like?

**RQ6:** What is the relative importance of key success factors?

**RQ7:** What are typical strategies which work well in the Iran’s cement industry?

**RQ8:** What are the opportunities for vertical integration in cement industry?

1-3) Thesis structure

This report has been structured in 6 main chapters. Other than current chapter, introduction, there are 5 chapters which are described in following lines.
1) Introduction

**Chapter 2 (Literature Review):** This chapter will present theories related to strategic planning, its approaches, models, and other studies related to research questions.

**Chapter 3 (Conceptual Framework):** Based on literature review part, in this chapter in this chapter a framework will be developed which shows how answering the research questions will realize the purpose of study.

**Chapter 4 (Methodology):** This chapter describes the methodology used when obtaining the data needed for this thesis. It consists of a set of decisions like purpose of the research, research approach, research strategy, data collection method, sample selection, analysis of data, and some considerations to show the validity and reliability of the study.

**Chapter 5 (Data Analysis):** This chapter will present the gathered data from different sources like document study and interviews and try to transform them to useful information.

**Chapter 6 (Finding and Conclusions):** This chapter will present the conclusions and implications based on findings in chapter 5 and interpret them according to theories.

![Figure 1: Thesis outline](image-url)
2) Literature Review

2-1) The Strategy Concept

2-1-1) Definition of strategy

Although strategy-related terms (e.g. strategic planning, strategic choice, strategic management, strategic thinking) have entered into management literature since about 50 years ago, word “strategy” itself is an ancient word. It comes from the Greek strategos, referring to a military general and combining stratos (the army) and ago (to lead). (11)

If you google the strategy’s definition you will find a long list of answers:

- Approach taken that will affect the overall direction of the organization and will establish the organization’s future environment.

- Strategy is the way an organization seeks to achieve its vision and mission. It is a forward-looking statement about an organization’s planned use of resources and deployment capabilities.

- Actions managers take to attain the firm’s goals.

- A method or plan for doing something.

- Visualizing a future scene and doing everything possible in order that real makes. Nowadays, Internet is a necessary tool in this process.

- Company’s overall plan of development. Corporate strategy can be more formally defined as a comprehensive plan or action orientation.
2) Literature Review

that identifies the critical direction and guides the allocation of resources of an entire organization

Hay and Williamson (1998) asked various people in organisations what they thought should go into a successful strategy; responses were grouped into five features (12).

1) Inspirational goals for people to aim for.

2) Linkage of tasks between groups so they work together.

3) Guidelines for individual decisions and prioritising.

4) Freeing individuals by reviewing critical and non-critical constraints.

5) Establishing a common language that everyone can understand.

Hamel and Prahalad (1993) ask the question what is strategy? In the context of organizational competitiveness, it depends on managers challenging their paradigm and focusing on three things (12).

- The concept of fit.
- Allocation of resources.
- Taking a long term perspective particularly in reference to money and risk.

Hamel and Prahalad (1993) believe this framework is unbalanced. They suggest there is an alternative view where:

- Stretch enhances fit;
- Leveraging resources is important; and
- The long term is about consistency of effort.

For having a more precise definition of strategy especially when it is used in management context, Mintzberg (1987) defines strategy in five ways (5 P): (13)

1) Strategy as a plan: It means the direction or course of action for the future.
2) Literature Review

2) Strategy as a pattern: Refers to the course of action an organization has followed over the past. In this view strategy means consistency in behavior.

3) Strategy as a position: It means the place in the environment where resources are concentrated. Or a company’s act to locate a popular product in a popular market (3).

4) Strategy as a perspective: It is an organization’s fundamental way of doing things. In contrast with the third P that looks out (i.e. environment) in perspective it looks in (i.e. inside the organization).

5) Strategy as a ploy: a specific "maneuver" intended to outwit an opponent or competitor (3).

Mintzberg divides strategies into 2 categories, intended, and realized strategies. The former refers to those strategies which are designed while the latter result from actions not designs. He also differentiates deliberate strategies where intentions that existed previously were realized, from emergent strategies where patterns developed in the absence of intentions, or despite them. (13)

The emergent strategies are not necessarily bad and deliberate strategies good; effective strategists mix these in ways that reflect the conditions at hand, notably the ability to predict as well as the need to react to unexpected events. (3)

2-1-2) Hierarchy of strategy

In a hierarchical view, strategy takes place at three different levels: corporate, business, and functional. These levels correspond with the activities of managers in different parts of the organization.

- **Corporate strategy** is the set of explicit or implicit decision rules that determines what business(es) a firm will be in and not be in, and how it will allocate resources among them.

- **Business strategy** is how a firm develops and sustains a competitive advantage within an industry.
2) Literature Review

- **Functional strategy** is the set of decisions made in marketing, operations, finance, research and development, and human resources that supports the business strategy (14).

2-1-3) Advantages and disadvantages

Any discussion of strategy inevitably ends on a knife-edge. For every advantage associated with strategy, there is an associated drawback or disadvantage (3):

1) "Strategy sets direction."

*Advantage:* The main role of strategy is to chart the course of an organization in order for it to sail cohesively through its environment.

*Disadvantage:* Strategic direction can also serve as a set of blinders to hide potential dangers. Setting out on a predetermined course in unknown waters is the perfect way to sail into an iceberg. While direction is important, sometimes it is better to move slowly, a little bit at a time, looking carefully but not too far ahead, as well as to each side, so that behavior can be shifted at a moment's notice.

2) "Strategy focuses effort."

*Advantage:* Strategy promotes coordination of activity. Without strategy to focus effort, chaos can ensue as people pull in a variety of different directions.

*Disadvantage:* "Groupthink" arises when effort is too carefully focused. There may be no peripheral vision, to open other possibilities. A given strategy can become too heavily embedded in the fabric of the organization.

3) "Strategy defines the organization."

*Advantage:* Strategy provides people with a shorthand way to understand their organization and to distinguish it from others. Strategy provides meaning, plus a convenient way to comprehend what the organization does.
2) **Literature Review**

*Disadvantage:* To define an organization too sharply may also mean define it too simply, sometimes to the point of stereotyping, so that the rich complexity of the system is lost.

4) "Strategy provides consistency."

*Advantage:* Strategy is needed to reduce ambiguity and provide order. In this sense, a strategy is like a theory: a cognitive structure to simplify and explain the world, and thereby facilitate action.

*Disadvantage:* Ralph Waldo Emerson said that "A foolish consistency is the hobgoblin of little minds. . ." Creativity thrives on inconsistency—by finding new combinations of hitherto separate phenomena. It has to be realized that every strategy, like every theory, is a simplification that necessarily distorts reality. Strategies and theories are not reality themselves, only representations (or abstractions) of reality in the minds of people. No one has ever touched or seen a strategy. This means that every strategy can have a misrepresenting or distorting effect. That is the price of having a strategy. (3)

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**2-2) Taxonomy of approaches to strategy-making**

Through the last four decades different researchers have explained their points of view about strategy. Like other concepts of management science, none of them can be considered as either completely wrong or completely right. As Mintzberg et al. in his book, Strategy Safari, says; strategy formation is like an elephant in a dark room. Everyone guesses about what it is just based on what he feels (3).

Different categorizations of strategy formulation approaches have been introduced so far. They certainly have overlaps and each author has categorized them according to how he is going to use them.

Mintzberg in his book identifies 10 different schools of thought. Table 1 shows these schools.
2) Literature Review

Table 1: Strategy formulation school of thoughts;
Source: Mintzberg, et. al. (1998, p. 3); (3)

Although these approaches follow different ways, they can be generalized in three major groups (3):

- **Prescriptive**: are more concerned with how strategies *should* be formulated than with how they necessarily *do* form.
- **Descriptive**: are concerned less with prescribing ideal strategic behavior than with *describing* how strategies do, in fact, get made.
- **Configuration**: is seeking to be integrative and based on some contingent factors, content make suggestions about the suitable school.

More details about comparison of prescriptive with descriptive approaches are available in Table 2.

Table 2: Prescriptive vs. Descriptive approach;
Source: Tom Forbes strategic management handouts; (15)

In a different taxonomy, approaches to strategy-making have been categorized into 5 groups based on the roles of top managers and organizational members. Five modes of strategy making are proposed: **Autocratic, Transformational, Rational, Learning, and Political** (4):
2) Literature Review

1) Autocratic approach features a leader who defines organizational goals and strategies, by maintaining full control of most decisions in the organization.

2) Transformational approach involves the creation and inspirational articulation of a compelling vision and a clear set of organizational goals or missions, which give meaning to all sets of activities throughout an organization.

3) The rational model focuses on thoroughness of analysis and evaluation of all possible courses of action.

4) The learning approach to strategy making involves continual learning and interaction, with heavy reliance on flexibility and adaptation, rather than on a predetermined and specifically outlined plan of action.

5) The political mode of strategy making relies on the independent behavior of organizational members. Strategy is made using new product ideas that merge upward while employee initiative shapes the organization’s strategic direction.

2-3) Prescriptive approaches

2-3-1) The Design School

This school believes that strategy formation should be a deliberate process of conscious thought; Action must flow from reason, and Strategy making must be learned. Strategies should be explicit, so they have to be kept simple. The design process is complete when strategies appear fully formulated as perspective and there is Little room for incrementalist view or emergent strategies. (3)

2-3-2) The Planning School

The 70 decade saw the publication of literally thousands of articles in both academic & popular business journal that extolled the virtue of formal “strategic planning”. Strategy as discussed in this school was to be guided by a cadre of highly educated planners. This school Take the SWOT model from design school, divide it into neatly delineated steps, articulate each of these with lots of checklists and techniques, and give special attention to the
setting of objectives on the front end and the elaboration of budgets and operating plans on the back end. These are generic steps:

- The objectives-setting stage
- The external audit stage
- The internal audit stage
- Strategy evaluation stage
- The strategy operationalization stage

2-3-3) The Positioning School

The positioning school not only accepted the propositions and fundamentals of design and planning school, but also added content by focusing attention to the strategies themselves and concentrating on the content of strategies. The revolutionary idea behind positioning school was that it proposed that only few key strategies are recommendable in each industry. Through determining strategies with ease of defense in each industry, a limited number of basic strategies, called generic strategies were categorized. The premises of positioning school are as follows:

- Strategies are generic, common and identifiable positions in the market place.
- The marketplace is economic and competitive.
- The strategy formation process is of selection among generic strategies.
- Analysts have a major role. (3)
2-4) Descriptive approaches

2-4-1) The Entrepreneurial School

In this school vision get a very important role in strategy. While other schools consider vision as a starting point of formulating (formation of) strategies, Entrepreneur Vision become the whole strategy here. (3)

- Strategy exists in the mind of the leader as perspective, specifically a sense of long-term direction, a vision of the organization's future.
- The process of strategy formation is semiconscious at best, rooted in the experience and intuition of the leader.
- The leader promotes the vision single-mindedly, maintaining close personal control of the implementation in order to be able to reformulate specific aspects as necessary.
- The strategic vision is thus malleable, and so entrepreneurial strategy tends to be deliberate and emergent—deliberate in overall vision and emergent in how the details of the vision unfold.
- The organization is likewise malleable, a simple structure responsive to the leader's directives.
- Entrepreneurial strategy tends to take the form of niche, one or more pockets of market position protected from the forces of outright competition.

2-4-2) The Cognitive School

The job of the cognitive school is to get at what this process (strategy formation) means in the sphere of human cognition, drawing especially on the field of cognitive psychology. The duality between strategists' knowledge and experience plays a central role in the cognitive school, giving rise to two rather different wings: objective and subjective. Cognitions as confusion: Simon popularized the notion that the world is large and complex, while human brains and their information-processing capacities are highly limited.
2) Literature Review

in comparison. Decision making thus becomes not so much rational as a vain effort to be rational. (3)

- Reasoning by analogy
- Illusion of control
- Escalating commitment
- Single outcome calculation

2-4-3) The Learning School

According to this school Strategies are formed by converge on patterns of behavior. So strategies are not formulated. Strategies could be traced back to a variety of little actions and decisions made by all sorts of different people. Some points that help the emergence of this school is mentioned below:

- Policy making is typically a never-ending process of successive steps in which continual nibbling is a substitute for a good bite. In literature it is called “disjointed incrementalism”.

- Incremental nature of the process but not disjointed, Central actors pulled it together which is it is called “Logical Incrementalism”.

- Driving and integrating role of top management in championing strategic initiatives by people who act deep within the corporate hierarchy, as internal entrepreneurs which is called “Strategic venturing”.

- There is no sequence of analysis first and integration later because the world is not some stable entity "out there" which is entitled "Retrospective sense making". (3)

2-4-4) The Power School

The power school characterizes strategy formation as an overt process of influence, emphasizing the use of power and politics to negotiate strategies favorable to particular interests. The word power is used here to describe the exercise of influence beyond the purely economic (which includes economic
power used beyond conventional, marketplace competition). This school is divided to two branches, Micro and Macro. The micro power deals with the play of politics—of illegitimate and alegitimate power—inside an organization. Strategy from a macro power perspective consists first of managing the demands of external actors (e.g. suppliers and buyers, unions and competitors, investment bankers and government regulators, etc).

When strategies do appear out of political processes, they tend to be more emergent than deliberate and more likely in the form of positions than perspective. Politics in organization benefit in different ways: (3)

- Politics as a system of influence can act in a Darwinian way to ensure that the strongest members of an organization are brought into positions of leadership.

- Politics can ensure that all sides of an issue are fully debated, whereas the other systems of influence may promote only one.

- Politics may be required to stimulate necessary change that is blocked by the more legitimate systems of influence.

- Politics can ease the path for the execution of change.

2-4-5) The Cultural School

As opposed to the Power School, the Cultural School deals with the role of organization and its society as a whole on the strategy formation process. While the Power School deals with the influence of internal politics in promoting strategic change, the Cultural School concerns itself largely with the influence of culture in maintaining strategic stability, indeed sometimes in actively resisting strategic change.

the nature of culture and how it impacts on behavior of people in organization exists below the level of conscious awareness. Indeed, the strength of a culture may be proportional to the degree to which it eludes conscious awareness (3).

Culture may influence the Decision-Making Style; Culture influences the style of thinking favored in an organization as well as its use of analysis, and
2) Literature Review

thereby influences the strategy-formation process. Culture mostly stimulates the Resistance to Strategic Change; A shared commitment to beliefs encourages consistency in an organization’s behavior, and thereby discourages changes in strategy. (3)

2-4-6) The Environmental School

Unlike other schools of thought, the Environmental school assumes the environment a major actor in strategy formation of a firm. To put it differently, this is the environment that shapes the strategies, while the passive organization only reacts. Environment is defined as a set of forces outside the control of an organization. Indeed, these forces are often described by vague abstracts. Firstly, the proponents of contingency theory suggested that specific dimensions of the environment and some attributes of organization are closely related. For example, the more stable the external environment, the more formalized the internal structure. Later these ideas were extended to strategy making—for example that stable environments favored more planning. After that, population ecologists argued that an organization is forced by the environment to obey or otherwise selected out. As a result, the strategic choice was made by the environment, instead of the organization itself. Similarly, advocates of institutional theory proposed that although environmental forces affect the strategic choice, they do not eliminate it.

2-5) Contingency approaches

It has been demonstrated that organization performance differs with respect to the strategy-making approaches used (Fredrickson & Mitchell, 1984; Hart, 1992). Consistent with general systems theory (Thompson, 1967), organizations would need to choose appropriate strategy-making approaches with internal and external considerations in mind, such as organization size and the competitive volatility of its environment (Porter, 1990). (4)
2) Literature Review

2-5-1) Mintzberg view

Mintzberg mentions that there are two main sides of Configuration school; one describes states—of the organization and its surrounding context—as configurations. The other describes the strategy-making process—as transformation. If an organization adopts states of being, then strategy making becomes a process of leaping from one state to another. In one sense, the premises of the configuration school encompass those of the prescriptive and descriptive approaches, but each in a well-defined context (3). As shown in Figure 2 and Figure 3; a composition of context, content, and process factors determines the approach which probably works better in an organization.

Mintzberg mentions that prescriptive approaches suit a context that is rather stable or at least predictable or, what amounts to the same thing, controllable by the organization. Following four conditions suggest some clear contexts in which the design school model would seem to apply best (3):

1) One brain can, in principle, handle all of the information relevant for strategy formation.

2) That brain is able to have full, detailed, intimate knowledge of the situation in question.

3) The situation has to remain relatively stable or at least predictable.

4) The organization in question must be prepared to cope with a centrally articulated strategy.
2) Literature Review

<table>
<thead>
<tr>
<th>Design</th>
<th>Planning</th>
<th>Positioning</th>
<th>Entrepreneurial</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>dominant, structural</td>
<td>source of strengths and weaknesses</td>
<td>responsive to procedures</td>
<td>source of competitive advantages, otherwise incidental</td>
</tr>
<tr>
<td>Leadership</td>
<td>dominant, judgmental</td>
<td>responsive to procedures</td>
<td>source of strengths and weaknesses</td>
<td>responsive to procedures</td>
</tr>
<tr>
<td>Environment</td>
<td>dominant, structural</td>
<td>responsive to procedures</td>
<td>responsive to procedures</td>
<td>responsive to procedures</td>
</tr>
</tbody>
</table>

**Contingency Dimensions of the Schools (continued)**

**Contextual Dimensions of the Schools**

- Situation
  - Defensible (into economic, technical, social, etc.) and Stable
  - Large machine (centralized, also divisional)
- Form of Organization
  - Large machine (centralized, also divisional)
  - Strategic programming
- Stage
  - Strategic programming
  - Reconception
  - Original conception, incitement

*Figure 2: Match between contingent variable and approaches to strategy (I)*

*Source: Mintzberg, et. al. (1998, p. 358); (3)*
2) Literature Review

Figure 3: Match between contingent variable and approaches to strategy (II)
Source: Mintzberg, et. al. (1998, p. 359); (3)
2) Literature Review

2-5-2) Hart View

However Hart discuss the concept based on the contrasting roles top managers and organizational members play, an integrative framework has been developed. He shows that typology of 5 strategy-making modes could cover different combinations of the roles (5). As shown in Figure 4, these five modes are Command, Symbolic, Rational, Transactive, and Generative.

![Figure 4: 5 strategy-making modes](image)

Source: Hart (1992, p. 7); (5)

To match those modes with the conditions in which they could lead to better results, Hart defines contingencies for 3 factors of environment, structure, and strategy. Taking a closer look at command and rational modes reveals that they should be categorized under the prescriptive approaches. So he agrees with Mintzberg that in relatively stable environments prescriptive approaches work well.
2) Literature Review

<table>
<thead>
<tr>
<th>Contingency Factors</th>
<th>Command</th>
<th>Symbolic</th>
<th>Rational</th>
<th>Transaction</th>
<th>Generative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>Simple; Low-level complexity</td>
<td>High velocity or radical change</td>
<td>Stable; Low degree of change</td>
<td>Complex; Many stakeholders</td>
<td>Turbulent; Dynamic and complex</td>
</tr>
<tr>
<td>Firm Size</td>
<td>Small</td>
<td>Medium-Large</td>
<td>Large</td>
<td>No relation</td>
<td>No relation</td>
</tr>
<tr>
<td>Stage of Firm</td>
<td>No relation</td>
<td>Rapid growth; Reorientation</td>
<td>Steady growth</td>
<td>Mature</td>
<td>No relation</td>
</tr>
<tr>
<td>Development</td>
<td>No relation</td>
<td>Proactive change (Defender)</td>
<td>Solidly position (Analyzer)</td>
<td>Continuous improvement (Analyzer)</td>
<td>Innovation</td>
</tr>
<tr>
<td>Strategic Orientation</td>
<td>No relation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5: Strategy-Making Modes and Contingency Factors  
Source: Hart (1992, p 13)

2-5-3) Barbuto view

Taking another point of view, Barbuto suggests 5 approaches in strategy-making. He propose that each of his five approaches --autocratic, transformational, rational, learning, and political-- can succeed if the appropriate contingent factors exist will help researchers and practitioners alike understand organizational direction and individual organizations’ strategy-making processes (4).

- The **autocratic approach** to strategic decision process will be most prevalent and effective in small organizations competing in relatively simple (non-changing) environments.

- The **transformational approach** to strategic decision process will be most prevalent and effective in fast growing or rapidly changing organizations competing in highly volatile (changing frequently) environments.

- The **rational approach** to the strategic process will be most prevalent and effective in large companies with established markets competing in fairly stable environments.

- The **learning approach** to the strategic process will be most prevalent and effective in complex environments with fairly large organizations positioned in several mature markets.
2) Literature Review

- The political approach to the strategic process will be most prevalent and effective in flat, hierarchical organizations engaged in high technology processes, competing in highly innovative industries.

2-6) Strategic planning

2-6-1) Context of strategic planning

Figure 7 shows how different schools of strategy-making are mapped in a 2 dimension space: how controllable the external environment seems to be, and how open-ended is the proposed internal process (3).

![Diagram showing mapping of strategy formation](image)

*Figure 6: Mapping the space of strategy formation*

Source: Mintzberg, et. al. (1998, p. 369); (3)

It can be concluded that prescriptive approaches are more effective when the environment is less volatile and the internal processes are more rational.
Cement industry, globally can be considered as a mature industry. The product of this industry is a commodity, the demand of the industry grows steadily, production technology is not that complex and technological advances are incremental, and finally its know-how can be conveyed easily and low-skill labor are employed to handle the production affairs.

In Iran, specifically, cement companies work in a government-controlled environment. The environment rarely is going to change. Since the overall government policy tends to increase private sector share, there might be some changes, like decreasing limitations on pricing. But these changes are not that hard to imagine and can be predicted in different scenarios.

Cement industry in Iran has relatively stable condition and the productions process has a low degree of complexity. The cement industry position in the previous map is the left-bottom corner of the picture. As it can be seen in the picture, in that part prescriptive approaches work better than the other approaches. Hart (5) and Barbuto (4), also show in their works that strategic planning can be an effective strategy-making tool in a company which is active in cement industry.

2-6-2) Generic Model of Strategic planning

One of the outputs of strategic planning is company’s strategies. So, according to previous sections strategic planning must be considered as a part of prescriptive approaches to strategy-making.

Strategic planning has a fairly well-established history. The first book on strategy was written in 1965 by Igor Ansoff, an executive at Lockheed Aerospace. Titled Corporate Strategy, it presented an extraordinarily logical, step-by-step set of concepts and approaches to making diversification decisions (14).

Although different models might have different steps or maybe they vary in the sequence of the steps, the strategic planning process essentially involves three stages:

- Where are we now?
2) Literature Review

- Where do we want to be?
- How are we to get there? (15)

All strategic planning approaches attempt to find an optimal match between the resources and capabilities available within the firm (Strengths and Weaknesses) and the external market conditions and environmental trends (Opportunities and Threats). This match or coalignment (often called a SWOT analysis) results in a strategy, whose efficacy translates into some level of corporate performance. (14)

![Diagram of A generic model for strategic planning](source: Mintzberg, et. al. (1998, p. 26); (3)

Similar to (14) and (15); Aghazadeh (2003) in a comparative analysis of 9 strategic planning models including Taylor, Hill, David, Mondy and Permeaux, Bryson, Glueck, Robson, and Steiner; concludes that despite their differences in number and sequences of stages, they have almost the same
structure. They start with the development of vision and mission. Then there are internal and external analyses to identify Strengths and Weaknesses, and Opportunities and Threats. After that, according to chosen mission and vision and SWOT analysis some strategies are formulized (16).

2-6-2) Strategic planning Success Factors

Hamel (1996) proposes the following set of ten principles for thinking about the way strategy is created to realize revolutionary strategy. These ten principles of Hamel (1996), capture what other authors have suggested has been wrong with strategic planning in the past and suggestions to improve the process. (17)

1) In order for strategic planning to be strategic it must be creative. Strategy based on the future being the same as the past is unrealistic. Strategy must challenge what the future looks like and the boundaries of the business.

2) Strategy making must be subversive; iconoclasts reinvent the industry by challenging established convention.

3) The bottleneck is at the top of the bottle in that, historically, senior management has developed the strategy and probably has least interest in changing what has given them success. Strategy making, therefore, must be freed from past experience because the business environment changes and the future, in all likelihood, will not be like the past.

4) There are revolutionaries in every organization but often there are no mechanisms for them to be heard, they are isolated. Revolutionaries must be given their say, otherwise the danger is that they will leave and challenge from outside the organization. (The increasing use of email has given revolutionaries the mechanism whereby they can have their say and reduce isolation).

5) Change is not the problem it is implementing it. Employees must be given control over the change process in order for it to gain support.

6) Strategy making must be democratic. A hierarchy of imagination is required as well as a hierarchy of experience giving everyone in the organization an opportunity to participate in a neutral environment.
7) Anybody can be a strategy creator but it is unlikely that senior management will be the revolutionary. Revolutionaries are thinking about ways to better the organization and are not intent on destroying it. They should, therefore, be listened to.

8) Perspective is invaluable, to see the world in a new way. Innovations arise in the creation of strategy.

9) Top down and bottom up approaches are not the only alternatives. A slice of decision making through the organization is required to give a diverse perspective. Often the thinkers are scattered throughout the organization, however the resource allocation process rests with senior management therefore they must believe and be involved in the revolution. This requires a learning process.

10) The end is not obvious and often in engaging in open strategy making if senior management do not like the outcome it may be ignored. This will kill the source of creativity.

The American Quality and Productivity Center’s International Benchmarking Clearinghouse analyzed the strategic planning processes of 45 top companies, including Alcoa, Deere & Company, Frito-Lay, Shell International Petroleum Company, Whirlpool and Xerox Corporation. The following is a summary of many of the best practices employed by these highly successful corporations, as revealed in the Clearinghouse’s 1996 strategy study (10).

1) Stretch goals drive strategic out-of-the-box thinking. While different organizations use different parameters, all of the best practice companies set targets that required a shift from business as usual.

2) Their planning processes are evolving and flexible. A "continuous improvement" philosophy guides the planning-process design.

3) Communication of the strategic plan is a formal and significant element of the process and it is viewed as a measure of quality planning.

4) Planners emphasize action plans and strategic thinking. Planners expect strategic thinking to take place primarily at the business unit level.

5) The planners' distinction between strategic planning and business planning is increasingly blurred. As the cycle time between strategic
plans shortens, business planning is done within the context of a strong corporate vision or culture, even if a corporate strategy is not articulated.

6) The role of strategic planning as a key element in the management system is explicitly recognized through strong links to other elements of the management system (e.g., strong human resources and organizational structures).

7) Documentation of strategic thinking is stressed.

8) A single core competence or capability is not the driver of strategic planning. Instead, the basis for competitive advantage and new business development is based on diverse competencies.

9) Approaches to planning processes and planning system designs vary greatly. Although approaches vary, the framework of issue and option generation, prioritization, review and feedback continues to have universal relevance.

Hay and Williamson (1998) asked various people in organizations what they thought should go into a successful strategy; responses were grouped into five features.

1) Inspirational goals for people to aim for.

2) Linkage of tasks between groups so they work together.

3) Guidelines for individual decisions and prioritizing.

4) Freeing individuals by reviewing critical and non-critical constraints.

5) Establishing a common language that everyone can understand. (17)

2-7) A basic Framework for strategic Planning

There is no one perfect strategic planning model for an organization. Each organization ends up developing its own nature and model of strategic planning, often by selecting a model and modifying it as they go along in developing their own planning process (8). To develop a proper framework
two questions should be answered. First, what stages does the model have? And second in what order should those stages be executed?

2-7-1) Identifying the stages of strategic planning

At its simplest, the design school proposes a model of strategy making that seeks to attain a match, or fit, between internal capabilities and external possibilities. The model places primary emphasis on the appraisals of the external and internal situations, the former uncovering threats and opportunities in the environment, the latter revealing strengths and weaknesses of the organization (3). Design school is the basis of planning and positioning schools. Planning school added formality and positioning school added analyses to it.

Planning school keeps the structure of design school. It takes the SWOT model from design school, divide it into neatly delineated steps, articulate each of these with lots of checklists and techniques, and give special attention to the setting of objectives on the front end and the elaboration of budgets and operating plans on the back end (3).

As in the other two prescriptive schools, in positioning school strategy formation continued to be perceived as a controlled, conscious process that produced full-blown deliberate strategies, to be made explicit before being formally implemented. But here the process focused more narrowly on calculation—to be specific, on the close-ended selection of generic strategic positions rather than on the development of integrated and unusual strategic perspectives (as in the design school) or on the specification of coordinated sets of plans (as in the planning school). The process continued to resemble that of the planning school in its formality.

According to the analyses of prescriptive approaches, it seems that the process of the strategic planning is the same in different models with slight variations in steps or tools they use. Scholars in each of Design, Planning, and Positioning schools have tried to improve the way each step is performed, and how a better understanding of that step could be grasped. But they haven’t changed the planning stages completely. These are generic steps of a strategic planning process (3):
2) Literature Review

- The objectives-setting stage
- The external audit stage
- The internal audit stage
- Strategy evaluation stage
- The strategy operationalization stage

2-7-2) Identifying the sequence of the stages

The steps mentioned in previous section, are not necessarily followed in the sequence they have been written. To have a procedure for strategic planning it’s necessary to define a sequence of activities which should be followed. There are different options for the sequence and the appropriate one should be chosen.

It should be noted that strategic planning, though described as disciplined, does not typically flow smoothly from one step to the next. It is a creative process, and the fresh insight arrived at today might very well alter the decision made yesterday. Inevitably the process moves forward and back several times before arriving at the final set of decisions (18). Here are some alternative sequences:

- **Situation** - evaluate the current situation and how it came about.
- **Target** - define goals and/or objectives (sometimes called ideal state)
- **Path** - map a possible route to the goals/objectives

One alternative approach is called *Draw-See-Think*

- **Draw** - what is the ideal image or the desired end state?
- **See** - what is today's situation? What is the gap from ideal and why?
- **Think** - what specific actions must be taken to close the gap between today's situation and the ideal state?
- **Plan** - what resources are required to execute the activities?
An alternative to the Draw-See-Think approach is called See-Think-Draw

- **See** - what is today’s situation?
- **Think** - define goals/objectives
- **Draw** - map a route to achieving the goals/objectives (19)

The first sequence (Situation, Target, Path) is chosen for the purpose of MCC Strategic Planning Framework. Since MCC is an established company and has a robust history of activities, it’s hard to imagine a future independent of its past. Its background should be systematically viewed and reflected in its direction and strategies for future. So, it's better to have a situational analysis (Internal and external analyses) or at least part of it, before deciding about its direction and strategies.

### 2-7-3) Proposed Framework

A model by Thompson and Strickland (2) has been adopted as the basis of this thesis' framework. To better reflect the MCC condition, some modifications have been applied to it. The first one is about the sequence of its stages; the second change is to add a business strategy analysis to the Thompson model.

Although it’s not explicitly stated that shaping a strategic direction is the first stage of strategic planning, in the map of strategic management process, the first step is to develop a vision and a mission. Since the first three steps of this process somehow show the strategic planning, it can be concluded that the first step of strategic planning is the same. In our model, developing vision and mission, is not the first step.

To many managers, and most strategic planners, the idea of thinking about and influencing the futures of their firms is an exciting one. Most managers are eager to set corporate goals and then to start formulating strategies that will help achieve those goals. However, two fundamental problems are inherent in approaching the strategic management task this way.
First, most businesses are ongoing concerns and have set in motion certain activities that are a reflection of decisions made in the past. To think about the future without a thorough understanding of what is actually taking place may lead managers to formulate strategies that are either unrealistic or impossible to implement. Second, managers sometimes are tempted to engage in a strategic redirection of their firms without a thorough understanding of the healthy parts of their existing strategy. (20)

To avoid these problems, a new part has been added to Thompson model. This part of suggested model has been adopted from L. J. Borgeious book, "Strategic Management: From Concept to Implementation" (20). In this step, recent years’ realized strategies are first identified and then their consequences for the company are analyzed.

The final framework has been presented in Figure 9. This model corresponds fairly well with the 3 first steps of Greenley's strategic management process model (See appendix 1) (21).
2) Literature Review

Figure 9: Suggested basic framework for strategic planning
3) Conceptual Framework

At the end of literature review chapter a basic model was presented that showed elements and their sequence in a typical strategic planning. In this chapter the meaning of each step will be clarified by questions set which should be answered. Then those questions which their answers can be answered at industry level will be chosen as research questions for customizing strategic planning model.

3-1) External Analysis

3-1-1) Industry and competitive analysis

Industry and competitive analysis uses a tool kit of concepts and techniques to get a clear fix on key industry traits, the intensity of competition, the drivers of industry change, the market positions and strategies of rival companies, the keys to competitive success, and the industry's profit outlook. This tool kit provides a way of thinking strategically about any industry's overall situation and drawing conclusions about whether the industry represents an attractive investment for company funds. The analysis entails examining a company's business in the context of much wider environment. (2)

Questions to Be Answered

1) What are the industry's dominant economic features?

2) What is competition like? And how strong is each of the competitive forces?

3) What is causing the industry's competitive structure and business environment to change?

4) Which companies are in the strongest/weakest positions?
3) Conceptual Framework

5) What strategic moves are rivals likely to make next?

6) What are the key factors of competitive success?

7) Is the industry attractive and what are the prospects for above-average profitability?

3-2) Internal Analysis

3-2-1) Business Strategy analysis

Strategy has been defined as a pattern by Mintzberg (13). It means that strategy is a pattern in a stream of decisions. This definition has two advantages: One, it is based on action, not just intentions. Therefore, it makes strategy observable and tangible. Second, it defines strategy in a way that does not depend on a firm having gone through a formal planning and documentation process (20). Business strategy analysis is composed of two steps: Strategy Identification, and Strategy evaluation.

All firms have a realized strategy, whether or not management has made strategy explicit in advance. A firm’s actual strategy can be quite different from what management thinks it is or from what it was intended to be. The process of delineating the realized strategy is called strategy identification (20).

Having identified the components of the business strategy, the manager now has the raw material with which to evaluate the quality of that strategy. After gaining a thorough understanding of the strategy’s quality can one know what elements of strategy should be changed and, equally important, which elements of strategy are sound and should not be altered. In addition, the evaluation process itself will suggest strategic alternatives.

The stronger company’s current overall performance, the less likely the need for radical changes is strategy. The weaker a company’s financial performance and market standing, the more in current strategy must be questioned. Weak performance is almost always a sign of weak strategy, weak execution, or both (2).
3) Conceptual Framework

Questions to Be Answered

1) What functional strategies have been followed so far?

2) How have they influenced the company?

3) What positive and negative aspects have those strategies had?

3-2-2) Evaluating Company Resources and Competitive Capabilities

Insightful company situation analysis is a precondition for identifying the strategic issues that management needs to address and for tailoring strategy to company resources and competitive capabilities as well as to industry competitive condition (2).

There is a key distinction between resources and capabilities. Resources are inputs into the production process - they are the basic units of analysis. The individual resources of the firm include items of capital equipment, skills of individual employee, patents, brand names, finance, and so on. But, on their own, few resources are productive. Productive activity requires the cooperation and coordination of teams of resources. A capability is the capacity for a team of resources to perform some task or activity. While resources are the source of a firm's capabilities, capabilities are the main source of competitive advantage. (22)

Questions to Be Answered

4) What are the company resource strengths and weaknesses and its external opportunities and threats?

5) Are the company's prices and costs competitive?

6) How strong is the company's competitive position relative to its rivals?

7) What strategic issues does the company face?
3-3) Setting Strategic Direction

3-3-1) Developing Mission

A mission statement, defines where the organization is going now, basically describing the purpose, why this organization exists (19). It could help managers by serving as beacon of the enterprise’s long-term direction, and helping channel organizational efforts and strategic initiatives. It gives the organization its own special identity, business emphasis, and path for development- one that typically sets it apart from other similarly situated companies. (2)

Questions to Be Answered

1) What are the customers' needs?

2) What do main stakeholders?

3) Which customer groups have been targeted by company?

4) How the company goes about creating and delivering value to customers and satisfying their needs?

3-3-2) Developing Vision

While a mission statement highlights the boundary of the company's current business, a vision statement shows where the company should be positioned in future. A well-articulated strategic vision creates enthusiasm for the course management has charted and engages members of the organization. Strategic visions usually have time horizon of five years or more unless the industry is very new or market conditions are so volatile that it's difficult to see that far in future with any degree of confidence.

Questions to Be Answered

5) What changes are occurring in the market arenas where we operate, and what implications do these changes have for the direction in which we need to move?

6) What new or different customer needs should we be moving to satisfy?
3) Conceptual Framework

7) What new or different buyers segments should we be concentrating on?

8) What new geographic or product markets should we be pursuing?

9) What should the company's business makeup looks like in five years?

10) What kind of company should we be trying to become?

3-4) Strategy Development

3-4-1) Identifying strategic options

Business strategy is concerned principally with (1) forming responses to changes under way in the industry, the economy at large, the regulatory and political arena, and other relevant areas; (2) crafting competitive moves and market approaches that can lead to sustainable competitive advantage; (3) building competitively valuable competencies and capabilities; (4) uniting the strategic initiatives of functional departments; and (5) addressing specific strategic issues facing the company's business.

Based on the existing situation and the defined vision, in this stage, different alternatives for realizing that vision should be identified. Strategy-making is not an analytical process and actually is something that comes out of managers' mind. So, a part of this stage of model is to provide necessary inputs for management decision about strategy. But, the more important part is a creative process which may make a hybrid of options, a totally new strategy, or tailor one option to the MCC.

Questions to Be Answered

1) Which strategies work better in the cement industry?

2) Which composition of product/customer should be targeted?

3) Which opportunities are available for vertical integration?

4) Which opportunities are available for merger and acquisition?
3) Conceptual Framework

3-4-2) Evaluating strategic options

Choosing among strategic alternatives is usually difficult. Managers encounter this difficulty because they lack perfect foresight. They must choose a course of action today, whose success depends on future conditions, without knowing exactly what the future looks like. Therefore, in selecting a strategic alternative, the manager is actually placing a 'bet': he is using his beliefs about the future to choose a plan that best fulfills his firm's objectives (23).

Once alternative strategies have been determined, the next step in the model is to evaluate them and choose the best one. Three tests are used to evaluate the merits of one strategy over another (2):

- **The goodness of Fit Test**—a good strategy has to be well matched to industry and competitive conditions, market opportunities and threats, and other aspects of the enterprise's external environment. At the same time, it has to be tailored to the company's resource strengths and weaknesses, competencies, and competitive capabilities.

- **The Competitive Advantage Test**—a good strategy leads to sustainable competitive advantage. The bigger the competitive edge that a strategy helps build, the more powerful and effective it is.

- The Performance Test—a good strategy boosts company performance. Two kinds of performance improvements are the most telling of a strategy's caliber: gains in profitability and gains in the company's competitive strength and long-term market position.

**Questions to Be Answered**

5) What are the impacts of each strategy on company's financial and strategic performance?

6) How consistent is each strategy with the industry structure?

7) How well do company's internal resources or capabilities support or detract from each strategy?
8) What competitive advantages or disadvantages would each strategy lead to?

3-5) Emerged Frame of Reference

Based on the literature review chapter, in this chapter it was shown that strategic planning is a suitable approach to strategy-making for a company which works in Iran’s cement industry. Then according to the strategic planning literature a framework was developed which shows the elements and sequence of a strategic planning project.

The rest of this research is devoted to customizing and tailoring this basic framework according to the context of cement industry. Apparently cement industry has different traits than other industries in Iran, the purpose of this study is to find these differences and modify the framework

Assuming that for completing a strategic planning project the questions in parts 3-3, 3-4, 3-5, and 3-6 should be answered, the purpose of research can be translated to finding those questions which should be answered at the industry level and not the company level. In Table 3

<table>
<thead>
<tr>
<th>1) External Analysis</th>
<th>Research Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>What are the dominant economic traits of Iran's Cement Industry?</td>
</tr>
<tr>
<td>Q3</td>
<td>What are the major driving forces of Iran's Cement Industry?</td>
</tr>
<tr>
<td>Q6</td>
<td>What are the critical success factors of Iran's Cement Industry?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2) Internal Analysis</th>
<th>Research Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2</td>
<td>What performance measures can be used for evaluating the results of typical Iranian cement company?</td>
</tr>
<tr>
<td>Q5</td>
<td>What does a typical cement company's value chain look like?</td>
</tr>
<tr>
<td>Q6</td>
<td>What is the relative importance of key success factors?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3) Setting Strategic Direction</th>
<th>-</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4) Strategy Development</th>
<th>Research Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>What are typical strategies which work well in the Iran's cement industry?</td>
</tr>
<tr>
<td>Q3</td>
<td>What are the opportunities for vertical integration in cement industry?</td>
</tr>
</tbody>
</table>
As shown in Table 3 there is no research question directly related to setting strategic direction of company, because there is no industry-based factor in determining the strategic objective.

If every stage of strategic planning considered as a process that has some inputs and outputs, none of the research question are about the output because they’re not going to run the strategic planning for a specific company, but they are going to present a model for strategic planning. And those questions provide the model with some considerations about inputs and process of strategic planning.

Figure 10: Emerged Frame of Reference
4) Methodology

In this chapter the procedure of the research is presented. This research methodology gives a set of guidelines for how information needed for research should be gathered and processed. In order to do this there are a series of steps to be followed, while at the same time using validity and reliability criteria to assure that the study fulfils certain standards (24). The research methodology and relations among different parts of it are interrelated are presented in Figure 11 below.

![Figure 11: Research Methodology](image)

### 4-1) Research Purpose

According to Yin (25), the purpose of an academic study can be exploratory, descriptive, or explanatory.

- **Exploratory studies:** Exploratory studies aim for basic knowledge within the problem area. These studies are suitable when a problem is difficult to demarcate and when relevant theory is unclear. They are appropriate when important characteristics and relations are hard to determine (25). Exploratory studies tend to start with a wide research area, and narrow down as the research develops (26).

- **Descriptive studies:** Descriptive research is appropriate when a problem is clearly structured but the intention is not conduct
4) Methodology

research about connections between causes and symptoms. The researcher knows what he or she wants to investigate but not the answers (25). According to Bernard in Miles and Huberman description means “making complicated things understandable by reducing them to their component parts” (27).

- **Explanatory studies**: explanation means “making complicated things understandable by showing how their component parts fit together according to some rules” (27). Explanatory research is used for studying relations between causes and symptoms. The researcher tries to identify the factors, which together cause a certain phenomena (25).

Neuman (28), has compared the conditions which these kinds of researches are appropriate for.

<table>
<thead>
<tr>
<th>Exploratory</th>
<th>Descriptive</th>
<th>Explanatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Become familiar with the basic facts, setting, and concerns.</td>
<td>Provide a detailed, highly accurate picture.</td>
<td>Test a theory’s predictions or principle.</td>
</tr>
<tr>
<td>Create a general mental picture of conditions.</td>
<td>Locate new data that contradict past data</td>
<td>Elaborate and enrich a theory’s explanation.</td>
</tr>
<tr>
<td>Formulate and focus questions for future research.</td>
<td>Create a set of categories or classify types.</td>
<td>Extend a theory to new issues or topics.</td>
</tr>
<tr>
<td>Generate new ideas, conjectures, or hypotheses.</td>
<td>Clarify a sequence of steps or stages.</td>
<td>Support or refute an explanation or prediction.</td>
</tr>
<tr>
<td>Determine the feasibility of conducting research.</td>
<td>Document a causal process or mechanism.</td>
<td>Link issues or topics with a general principle.</td>
</tr>
<tr>
<td>Develop techniques for measuring and locating future data.</td>
<td>Report on the background or context of a situation.</td>
<td>Determine which of several explanations is best.</td>
</tr>
</tbody>
</table>

*Table 4: Different research purposes*  
*Source: Neuman (2003, p. 29); (29)*

This thesis aims to develop a strategic planning model for a typical Iranian cement company, actually the question is clear: “How a strategic planning model can be adapted to the specific situation of an Iranian cement company by finding common features of their external and internal environment?” and the author of it tries to find the answer of this question. So, its main purpose is Descriptive even though it also can be considered somewhat an exploratory research.
4) Methodology

4-2) Research Approach

There are two general approaches of a research, qualitative and quantitative. When conducting a quantitative research, statistical methods are used to analyze the data and a large number of respondents are selected, either randomly or judgmentally. A quantitative approach is formalized, structured and characterized by a high degree of control from the research (25).

During a qualitative research one or few objects are studied in depth and the main purpose is to gain a deeper understanding of the problem studied and to acquire a profound knowledge of the studied objects. The qualitative approach is characterized by closeness between the sources and researcher, and a low degree of formalization (25).

Cooper and Schindler state that a qualitative research aims to achieve an in-depth understanding of a situation and it incorporates a collection of interpretive techniques which try to describe, decode, translate, and otherwise learn to accept the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world. A collection of techniques includes case studies, individual depth interviews, observation, focus groups, action research, etc (29).

Since this research tries to gain a deeper understanding of cement industry, and its questions are about basic issues of industry like KSFs, driving forces, and value chain and not numerical and statistical issues; a qualitative approach is a more suitable choice.

4-3) Research Strategy

A research strategy will be a general plan of how the researcher will go about answering the research questions s/he has set (26). According to Yin, there are five ways of conducting social science research, namely experiments, surveys, archival analysis, history, and case studies (25). Yin further provides three conditions to apply in order to decide upon which strategy to use: 1) the type of research question posed. 2) The extent of
control an investigator has over actual behavioral events. 3) The degree of focus on contemporary, as opposed to historical, events (25).

The connection between these conditions and the five different ways of conducting research are presented in Table 5.

<table>
<thead>
<tr>
<th>Form of Research Question</th>
<th>Requires control over behavioral events</th>
<th>Focuses on contemporary events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>how, why</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>who, what, where, how many, how much</td>
<td>No</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>who, what, where, how many, how much</td>
<td>No</td>
</tr>
<tr>
<td>History</td>
<td>how, where, how many, how much</td>
<td>No</td>
</tr>
<tr>
<td>Case study</td>
<td>how, why</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 5: relevant situations for different research strategies
Source: Yin (1994, p. 6); (26)

Taking a look at research questions in the end of previous chapter shows that all the research questions start with what. As shown in Table 5, research strategies for finding answers of What-Questions are survey and archival analysis. A survey will be conducted for getting expert opinions. Archival analysis is also used for both cross checking and getting statistical information.

4-4) Data Collection Method

After having determined the most suitable research strategy, it is necessary to decide on how the empirical data will be collected (25). Yin mentions that there are six important sources of evidence, namely documentation, archival records, interviews, direct observation, participant observation, and physical artifacts. None of these sources of evidence has complete advantage over all of the other instead they complement each other (25).

According to Yin, documents are important in the data collection stage, due to their overall value. However, care must be taken in the interpretation of documents, since they are often prepared for another purpose and audience than that of the research purpose (25).
4) Methodology

Yin defines the interview as a two-way conversation that gives the interviewer the opportunity to participate actively in the interview. The interview is structured and based on predetermined questions. He further classifies the interviews into there are three types: open-ended, focused, and structured (25).

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Documentation</strong></td>
<td></td>
</tr>
<tr>
<td>– Stable - can be viewed repeatedly</td>
<td>– Reliability – can be low.</td>
</tr>
<tr>
<td>– Unobtrusive – not created as a result of the case study.</td>
<td>– Biased selectivity, if collection is incomplete.</td>
</tr>
<tr>
<td>– Exact – contains exact names, references, and details of an event.</td>
<td>– Reporting bias – reflects (unknown) bias of author.</td>
</tr>
<tr>
<td>– Broad coverage long span of time, many events, and many settings.</td>
<td>– Access – may be deliberately blocked.</td>
</tr>
<tr>
<td><strong>Archival Records</strong></td>
<td></td>
</tr>
<tr>
<td>– Same as above for documentation.</td>
<td>– Same as above for documentation.</td>
</tr>
<tr>
<td>– Precise and quantitative.</td>
<td>– Accessibility due to privacy reasons.</td>
</tr>
<tr>
<td><strong>Interviews</strong></td>
<td></td>
</tr>
<tr>
<td>– Targeted – focused directly on case study topic.</td>
<td>– Bias due to poorly constructed questions.</td>
</tr>
<tr>
<td>– Insightful – provides perceived causal inferences.</td>
<td>– Respond bias.</td>
</tr>
<tr>
<td><strong>Direct Observations</strong></td>
<td></td>
</tr>
<tr>
<td>– Reality – covers events in real time.</td>
<td>– Inaccuracies due to poor recall.</td>
</tr>
<tr>
<td>– Contextual – covers context of event.</td>
<td>– Reflexivity – respondent gives what interviewer wants to hear.</td>
</tr>
<tr>
<td><strong>Participant Observation</strong></td>
<td></td>
</tr>
<tr>
<td>– Same as above for direct observations.</td>
<td>– Same as above for direct observations.</td>
</tr>
<tr>
<td>– Insightful into interpersonal behavior and motives.</td>
<td>– Bias due to investigator’s manipulation of events.</td>
</tr>
<tr>
<td><strong>Physical Artifacts</strong></td>
<td></td>
</tr>
<tr>
<td>– Insightful into cultural features.</td>
<td>– Selectivity.</td>
</tr>
<tr>
<td>– Insightful into technical operations.</td>
<td>– Availability.</td>
</tr>
</tbody>
</table>

*Table 6: Strengths and weaknesses of different data collection methods*
Source: Yin (1994, p. 80); (26)

Data that will be collected throughout this study is expected to be mainly of a qualitative nature since it is in the form of words and not derived from numbers. Two valuable sources of evidence are documentation and interview. Documents could be either internal like management reports, meeting notes; or external such as market researches, journal articles, and news.

The most commonly used interview method is open-ended, where the researcher asks the respondent unstructured questions, thus allowing the interview to be more of a discussion. The respondents can be asked for facts as well as their own personal opinion. When a focused interview takes place, the respondent is interviewed during a brief period of time-an hour, for
example. The purpose with a focused interview could be to confirm certain facts that are already known to the researcher. The third form of interview, structured, is more of a combination of an interview and a survey and entails more structured questions along the lines of a formal survey (25).

According to Saunders _et al._, most qualitative interviews occur on a one-to-one, face-to-face basis (26). Cooper and Schindler state that telephone interviews have three advantages over personal interviews: 1) the use of telephones brings a faster completion of a study; 2) the reduction of interviewer bias: physical appearance, body language, and actions of the interviewer 3) the caller is who decides the purpose, length, and termination of the call. They further address some of the disadvantages: limitation on interview length, limitations on use of visual or complex questions, ease of interview termination, less participant involvement. (29)

_Face-to-face_ and _telephone interviews_ and _documentation_ are used as main data collection methods for this study. Documentation in this study is mostly used to find information about industry dominant traits, and value chain and also to prepare some data to be discussed in interviews. According to Yin (25), documentation is mostly used to confirm and augment evidence gathered from other sources.

Both Face-to-Face and telephone interviews will be used in this study. Face-to-Face interview has higher priority over telephone interview, however due to some time and money constraints some telephone interviews are inevitable. Interviews are open-ended with a clear question structure. They will be a little flexible to cover some issues ignored in questionnaire design.

### 4-5) Sample Selection

Sampling techniques provide a range of methods that enable you to reduce the amount of data you need to collect by considering only data from a sub-group rather than all possible cases or elements. Non-probability sampling is done without chance selection procedures. Purposive sampling or judgmental sampling is a non-probability sampling method that basically allows a researcher to select cases that seems to be best suited to answer the
4) Methodology

research questions. This form of sampling is often used when working with small samples, especially in a case study when a researcher is looking for cases that are particularly informative (26).

The non-probability or judgmental sampling will be used for this study. Each case should have some characteristics to give relevant and accurate data. The first sampling criterion is to have information in the cement industry. So, cement companies and also investment companies which are active in this industry would be a sensible choice. The second criterion is about the interviewee, s/he'd better be from top executives of the company because the strategy and strategic issues usually are the responsibility of top managers of a company.

In order to have different ideas and different points of view, interviewees will be chosen from both top and middle management. Four cement companies will be selected and in each of them one of top managers (preferably CEO) and one or two of middle managers will be interviewed. Total number of interviews would be between 10 to 12.

4-5) Data Analysis

The ultimate goal of analyzing data is to treat the evidence fairly, to produce compelling analytical conclusions and to rule out alternative interpretations. Data analysis involves turning a series of recorded observations into descriptive statements (25). When analyzing the data collected, the intentions are to find answers on the previously stated objectives. Miles and Huberman present the following three parallel flows of activity to explain the analysis (27).

- **Data reduction**: The process of selecting, focusing, simplifying, abstracting and transforming the data. The purpose is to organize the data so that the final conclusion can be drawn and verified.

- **Data display**: Taking the reduced data and displaying it in an organized compressed way so that conclusions can be more easily drawn.
4) Methodology

- **Conclusion drawing/verification**: Deciding what things mean, noting regularities, patterns, explanations, possible configurations, casual flows, and propositions.

Miles and Huberman further present pattern coding as a way to present data. For a qualitative analyst, pattern coding is important since it reduces large amounts of data into a smaller number of analytic units. This facilitates for the researcher since they can stay more focused and helps the researcher to elaborate a cognitive map in order to understand local incidents and interactions (27).

In this study three mentioned steps are followed in order to analyze the empirical data. The data will be reduced through a within-interview analysis where the cases will be compared against the frame of reference. Further, the data will be displayed through a cross-interview analysis where the interviews compare against one another. Finally, conclusions from these analyses will be drawn based on the patterns of similarities and differences, which are discovered in the data reduction and data display.

4-6) Quality Standards

There are two important criteria that can be used to determine the quality of a research: the reliability and the validity.

**Validity**

Validity is concerned with whether the findings are really about what they appear to be about (26). Yin has presented three commonly used tests for a researcher to test the validity (25). These include construct validity, internal validity, and external validity. Yin (2003) discusses four different tests of judging the quality of research design; 1) **Construct validity**: establishing correct operational measures for the concepts being studied, 2) **Internal validity**: establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships, 3) **External Validity**: establishing the domain to which a study’s findings can be generalized.
4) Methodology

Yin claims that internal validity only is used for explanatory or causal studies, this study mainly is descriptive and therefore the test will not be dealt with further. Yin also states that external validity deals with the problems of making generalizations of the case study (25). Since there is no generalization in

There are three tactics according to construct validity: Use multiple sources of evidence; Establish chain of evidence; Have key informants review draft case study report (25). In this research, documents and interviews are used as sources of evidence. Throughout this study references will be made to all the sources from which evidence will be collected. Furthermore, after designing the interview questionnaire, and guide; it will be reviewed and approved by the supervisor and also some industry experts before conducting the interview with respondents.

The interviewees will be contacted in advance about the matters are going to be discussed and also to assure that they are qualified for the interviews. To increase the external validity an interview guide, will be developed and followed through the study.

Reliability

The goal of reliability is to minimize the errors and biases in a study. The objective is that if a later researcher follows the same procedures as described by a previous researcher and conducts the same study all over again; the later researcher should arrive at the same finding and conclusions as the previous. One prerequisite for the researcher to be able to repeat a previous study is that the procedure followed in the earlier case is documented. Hence, a good guideline is to conduct the research so that an auditor could repeat the procedure and arrive at the same result (25).

To have more reliable research, several respondents will be asked the same questions and most the conclusions will be drawn based on expert consensus. Those issues which are more agreed on will be assumed as fact. Since the interviewees have an in-depth knowledge in the research field, it has a good chance to have the same results in repetitive run of study. There is something that should be considered in this research and that is time-dependency of the study. Since this research is focused on the environment
of industry and it changes by the time, the results can be different in a different time, but in short-time there will not certainly be a drastic change in results. It might be just slight variations in number of factors and their importance.

In Figure 12, a schematic view of this research’s methodology has been sketched.
5) Data Analysis

5-1) An overview to global cement industry

1) Cement

In the most general sense of the word, cement is a binder, a substance which sets and hardens independently, and can bind other materials together. The name "cement" goes back to the Romans who used the term "opus caementitium" to describe masonry which resembled concrete and was made from crushed rock with burnt lime as binder. The volcanic ash and pulverized brick additives which were added to the burnt lime to obtain a hydraulic binder were later referred to as cementum, cimentum, cäment and cement. Cements used in construction are characterized as hydraulic or non-hydraulic (1).

Hydraulic cements are materials that set and harden after being combined with water, as a result of chemical reactions with the mixing water, and that, after hardening, retain strength and stability even under water. The key requirement for this strength and stability is that the hydrates formed on immediate reaction with water be essentially insoluble in water.

Most construction cements today are hydraulic, and most of these are based on Portland cement, which is made primarily from limestone, certain clay minerals, and gypsum in a high temperature process that drives off carbon dioxide and chemically combines the primary ingredients into new compounds.

Non-hydraulic cements include such materials as (non-hydraulic) lime and gypsum plasters, which must be kept dry in order to gain strength, and oxychloride cements, which have liquid components. Lime mortars, for
example, "set" only by drying out, and gain strength only very slowly by absorption of carbon dioxide from the atmosphere to re-form calcium carbonate through carbonatation (1).

2) Market and Market players

Cement is categorized as a construction material. According to Data Monitor Report, construction material market is composed of sand, gravel aggregates, cement, concrete and bricks. The market value of construction materials generated total revenues of $485.1 billion dollars in 2006. It's anticipated that the market value will grow at an average rate of 4.7% over the 2006-2011 period. By the end of 2011 the market value has reached the $609.5 billion. Cement sector was worth $132.3 billion, which represents 27.3% of the market value share.

Global cement production was 1860 million MT in 2003 with a predicted average growth rate of 3.5%, so the world production in 2008 must be about 2200 million MT. Asia-Pacific is the largest regional market, with 61.9% global industry revenue generated there. Europe and United States are in the next positions having 19.2% and 10.2% accordingly. The rest of world generates just about 10.2% of total revenue.

Lafarge S.A., Holcim, Taiheiyo Cement Corporation; are the biggest cement producers around the world. Lafarge, a French company operating in 75 countries, recorded revenues of nearly $20 billion in 2005. Holcim, a Swiss holding primarily operating in Europe and North America, recorded revenues of about $14 billion. Recent developments include Cemex's acquisition of UK-based RMC, Holcim’s capture of Aggregate Industries in the UK and their controlling stake in Indian giants Gujarat Ambuja and ACC.

3) Strategic issues

Firms are looking to reduce costs and organize production more efficiently. New facilities and increased capacities are being put into place in order to remove supply chain uncertainty and improve consumer confidence. Players are looking to diversify the geographical spread of their
operations and end-markets to capitalize on developing markets and to mitigate the threat of falling revenues from mature markets.

Further opportunities for growth may come from innovative products, necessitating investment in research and development (R&D). For instance, Lafarge is currently working on ways to apply complex nano-technology to cement and concrete products. The company’s focus on R&D has enabled it to introduce differentiated and enhanced products in the market, thereby increasing its market share.

Cement is produced in energy sensitive process, as a result, high fuel and electricity prices may impact heavily on manufacturers’ margins, or else lead to price rises for these materials going forward.

There is a thinking paradigm among the Iranian politicians that consumers should be protected against supplier, so since 6 years ago this industry has experienced government-forced pricing. During 2007-2008, the production capacity of the industry will increase to 60 million MT/year. It is predicted that by reaching this capacity, the shortage will be eliminated, and possibly the rationing and pricing limitation laws would not be enforced anymore.

5-2) Industry Dominant Market features

1) Market size

Total consumption of cement was 32 million MT in 2004. Estimations show that cement market volume in 2008 is about 45 million MT, and by the end of 2010, it will have reached to 52 million MT (2)

2) Scope of competitive rivalry,

Taking a look at statistics apparently shows that cement industry is mostly a local and regional industry. Global cement consumption was about 1800 million MT while the total international trade (Export/Import) was just 126.5 million MT. In other words, the share of international trade in this
5) Data Analysis

industry is less than 8 percent. The main reason behind this characteristic is the high transportation cost.

3) Market growth rate and position in business life

Cement Market growth rate has a direct relation with GDP growth rate. The higher GDP growth rate, the higher cement growth rate. So, any estimation of market growth rate is a function of GDP growth rate. Since there are different ideas about the future of Iran’s economy, there are different predictions of market growth rate. Heibati (3), shows that by an average rate of 8%, 5.5% and 4.5% for GDP growth rate market would grow at 10.3%, 7.7%, and 7.4% accordingly. Considering IMF's predictions about Iran's GDP growth rate, 7.7% is the closest prediction for cement growth rate in near future.

In a scenario analysis in CIDCO², based on the experts’ opinions pessimistic and optimistic rates were estimated to be 5.7% and 8.9% accordingly. It seems that in a realistic prediction next decade should be considered as two different 5-year periods. In the first 5 years the market will experience a relatively high growth rate predicted that the market will grow at 8.9% rate for next 5 years and after that the growth rate will decrease to 4.9%. So, the market volume will be around 51.5 million MT in 2010.

4) Number of rivals and their relative size:

Although there are 46 active factories around the country (2), it is not competitive market. The results of a research (4), show that there is a kind of oligopoly in Iran's cement industry. By calculation of concentration ratio and Herfindahl index, author concludes that few key players hold the majority of market share.

Major competitors and their market share have been mentioned in Table 7. As shown in the table, 4 large holdings account for 73% of market share. MCC belongs to CIDCO which is the Third largest holding in cement industry.

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² MCC's parent company
5) Data Analysis

### Table 7: Rivals' market shares

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fars Khuzestan</td>
<td>38%</td>
</tr>
<tr>
<td>2</td>
<td>Terhan Cement</td>
<td>13%</td>
</tr>
<tr>
<td>3</td>
<td>Cement Industry Development</td>
<td>12%</td>
</tr>
<tr>
<td>4</td>
<td>Ghadir Investment</td>
<td>10%</td>
</tr>
<tr>
<td>5</td>
<td>Sepah Bank</td>
<td>5%</td>
</tr>
<tr>
<td>6</td>
<td>Ehdas Sar'at</td>
<td>5%</td>
</tr>
<tr>
<td>7</td>
<td>Holcim (A Swiss Holding)</td>
<td>3%</td>
</tr>
<tr>
<td>8</td>
<td>The rest</td>
<td>14%</td>
</tr>
</tbody>
</table>

Source: CIDCO internal documents

5) The number of buyers and their relative sizes

Bakhshi (4), shows that in contrast with supply side, there are numerous buyers on demand side and no kind of monopoly or oligopoly is seen on the demand side of industry. Cement is used for construction or repairmen of buildings, development of infrastructure, and production of cement applications.

6) Degree of vertical integration

Backward integration is common among cement factories. They usually have their own quarries and extract it either by themselves or outsourcing to other companies. But forward integration is not as common as backward integration. Contrary to cement industry, its downstream industries are not controlled by government. So, in order to increase their profitability some of cement companies have entered into cement applications industries.

7) Ease of entry/exit

There are some barriers which make it hard for new entrants to enter into market. High initial investments are the first barrier. It's estimated that establishment of a new medium plant costs more than €120-130 million. For a while, low interest loans by government made it attractive for investors – mostly those which were active in this industry- to start new plants. Now that most of those investments are about to production, government supports which have decreased. Current market players have invested large amount
5) Data Analysis

On the other hand pricing control decreases profitability of industry and even in new investments makes it unfeasible. Bidabad (5), by performing financial analyses concludes that at current prices new investments are not feasible. Old factories are profitable because their depreciation cost is very low. Accounting statements are based on historical prices, not replacement prices. That causes a big difference in COGS for old companies and new ones.

8) Technological/Innovation

The rate of technological change in this industry is very low. In fact the main difference of new factories and old ones is increasing efficiency of energy consumption, applying automation in some parts of production process, and considering some environmental considerations like dedusting. Generally, the industry has not experienced any radical changes in technology and the basic of production has remained unchanged.

9) Product characteristics

Highly standardized, the products of different producers are essentially identical (buyers perceive little real difference from seller to seller except as may relate to time delivery). Some of companies produce several types of products but the process does not change, products are different just in their additives which are some certain minerals. So, all the companies are able to produce them.

10) Scale economies

Moderate; all companies have virtually equal manufacturing costs but scale economies exist in transportation costs, purchasing large quantities of raw materials, and sales and administrative overheads.

11) Learning and experience effects

Not a factor in this industry.

12) Capacity utilization

Manufacturing efficiency is highest between 95 to 100 percent of rates capacity, bellow 95 percent utilization, unit costs run significantly higher.
5) Data Analysis

13) Industry Profitability

The industry used to be one of the most attractive industries 5 years ago, but after pricing control and rationing by government its profitability started to decline, but even now for old factories the profitability is about the average of industry as whole. If the prices limitations are eliminated the profitability of old factories increases to above average, but for new factories it will be just about average.

5-3) Value Chain

1) Inbound Logistic

The most common raw materials used for cement production are limestone, chalk and clay. The major components of the raw materials, the limestone or chalk, is usually extracted from a quarry very close to the plant. Companies usually have their own quarries. The quarries are extracted either by explosive or non-explosive methods. In Iran, the explosive method is more common than non-explosive. Companies usually don’t extract the quarries by themselves and outsource the process.

Other than limestone and clay which account for nearly 90 percent of raw materials, some minerals like iron ore, silicate, and gypsum are used as raw materials. Companies usually have to transport these minerals for a longer distance.

2) Operations

A schematic of the cement production process is shown in Figure 13. The raw materials are crushed, ground, and proportioned so that the resulting mixture has the desired fineness and chemical composition for delivery to the pyroprocessing systems. About 1.6 tons of raw materials are required to produce one ton of Portland cement. In dry processing the materials are ground into a flowable powder in horizontal ball mills or in vertical roller mills. Drying of raw materials before pyroprocessing is done utilizing waste heat from the kiln exhaust, clinker cooler hood, or auxiliary heat from a stand-alone air heater.
Clinker is produced by pyroprocessing in large kilns. These kiln systems evaporate the inherent water in the raw meal, calcine the carbonate constituents (calcination), and form cement minerals (clinkerization). The ground raw material, fed into the top of the kiln, moves down the tube countercurrent to the flow of gases and toward the flame-end of the rotary kiln, where the raw meal is dried, calcined, and enters into the sintering zone. In the sintering (or clinkering) zone, the combustion gas reaches a temperature of 3300–3600 °F.

Once the clinker is formed in the rotary kiln, it is cooled rapidly to minimize the formation of a glass phase and ensure the maximum yield of alite (tricalcium silicate) formation, an important component for the hardening properties of cement. The main cooling technologies are either the grate cooler or the tube or planetary cooler. In the grate cooler, the clinker is transported over a reciprocating grate through which air flows perpendicular to the flow of clinker. In the planetary cooler (a series of tubes surrounding the discharge end of the rotary kiln), the clinker is cooled in a counter-current air stream. The cooling air is used as secondary combustion air for the kiln.

After cooling, the clinker can be stored in the clinker dome, silos, bins, or outside. The material handling equipment used to transport clinker from the clinker coolers to storage and then to the finish mill is similar to that
5) Data Analysis

used to transport raw materials (e.g. belt conveyors, deep bucket conveyors, and bucket elevators). To produce powdered cement, the nodules of cement clinker are ground to the consistency of face powder. Grinding of cement clinker, together with additions (3-5% gypsum to control the setting properties of the cement) can be done in ball mills, ball mills in combination with roller presses, roller mills, or roller presses. (6)

3) Outbound Logistics

After storing cement in silos, depending on orders it is delivered either in bulk or packaged form. Transportation is very important in this industry. Rarely, are products transported to a distance more than 250 kilometers. Since a cement factory is considered as a major customer for transportation companies, with an average annual order around 2 to 4 million MT, after bargaining with related unions, transportation prices are set at the beginning of each year. Some cement companies have established small transportation companies in order to increase their bargaining power in dealing with their transportation agents, but none of them handle all of its transportation needs alone.

4) Sales and Marketing

Due to shortage of supply, cement companies don't have to do marketing activities. In fact, they have to sell their products to some certain customers. Distribution areas are determined, and each factory must distribute its products to its neighbor provinces. Selling prices are fixed and the same for all factories.

Customers get permits from a government body associated with Iran's trade ministry, and factory deliver products according to government notices. Downstream cement products factories and infrastructure projects receive their share directly from factories. But cement needed for building constructing and repairing, are delivered to distribution agents which are responsible for selling cement to end users. Since factories' selling prices are controlled strictly but retailers' prices are not controlled that strict, there is a black market in cement industry that sells the cement in 2 or 3 times formal prices.
5) Data Analysis

5) Service

Cement is a commodity and nothing is defined as after sales services.

5-4) Driving Forces

To extract cement industry driving forces, interviewees were asked to mention some factors which they thought as the major sources of changes in a five-year future. After summarizing the results of interviews and omitting common items, finally 10 items were identified. Each one was scored according to the number of respondents who mentioned them as a driving force. Then they were sorted descending and those which had a score more than five were chosen as the industry driving forces.

1) Baby boom: Iran had a baby boom from 1980 to 1986. During that period of time population experienced growth rates of 6%. Babies born at that time now are in marriage age and need accommodations. So, there is an increasing demand for buildings. The annual need for new apartments is near one million now and it’s predicted that this need will continue to grow to a peak of 1.6 million in 2013. (Markaz Pazhohesh'ha Report). This increasing demand will increase the demand for cement and cement applications.

2) Increase in oil price: Iran’s economy is heavily dependent on its natural resources especially its oil and gas resources. In recent years the price of these resources has experienced a dramatic increase. This increase in oil price has caused a notable increase in annual country’s budget which means starting of numerous development projects. The needs of these projects can affect total demand for cement industry.

3) Security Council’s sanctions: because of the sanctions imposed on Iran’s economic relations, Iranian companies cannot make fair deals with their foreign suppliers. So, transaction costs have risen notable. Cement companies import some additives and spare parts which sanctions might disturb their supply and cause some problems in production. Companies which use new technologies will especially suffer more difficulties.
5) Data Analysis

In the worst case scenario, if Iran were imposed oil-sanction, whole economy would encounter a deep recession. In that case industry's demand would fall drastically because the recession brings construction projects to halt.

4) *Economy Liberation:* after Iran's 1979 revolution, most industries were nationalized. This nationalization caused a governmental economy and the role of government has been increasing up to now. To make the economy more efficient, in recent years government has started privatizing, reducing government regulating, and replacing it by market economy regulation. This program has progressed slowly till now but it's predicted that will continue by a higher rate in near future.

5) Elimination of *price and distribution barriers:* since cement industry is considered as a strategic industry, government controls it by some non-tariff regulations. In last 5 years cement companies have had to distribute their products through certain distribution channels by a price determined by government. Unless some short periods, during this time export of cement was forbidden. The difference of end customer and factory price makes a potential rent about $1.5 Billion in this industry. This rent is distributed among distribution channel agents.

6) *Limitation on government supports:* Government interventions have both negative and positive sides; Sometimes by imposing limitations on import of goods, by tax exemption, by subsidizing, by making interest-free or low interest loans, and different other ways. The results show that implementation of these supports have not been successful in national perspective, because they led in investors' wrong decisions by giving unreal signals. It is predicted that in future the form of supports will change and certainly these kinds of direct supports will be omitted.

7) *Joining WTO:* joining WTO causes a decrease in tariffs and can change import/export balance. As mentioned before cement industry is a regional industry and since Iran's production is superior to other countries in the Middle East region, it might not influence the balance noticeably. But some other regulations like environmental considerations, quality
standards, or subsidies elimination may cause an increase in production costs.

8) **Reconstruction and renovation** in neighbor countries: Iran has been surrounded by several relatively fast developing countries. Some of them are the countries around Caspian Sea; in addition both of Iraq and Afghanistan are neighbors of Iran. Iraq and Afghanistan after war have to invest heavily in their infrastructures and industries. The process of reconstruction takes long time to be completed, which guarantees a bright future for cement consumption in this region. Since in this industry closeness to the customers accounts for competitive advantage, Iran as a main regional cement producer can potentially be a dominant supplier in these markets.

9) **Oversupply**: Lots of development projects are in progress around the country. Having finished all these projects total cement supply will pass 90 million MT in 2012, while demand will increase to less than 60 million MT. this means an oversupply near 30 million MT in 2012. But it is not realistic because some of these projects will not be completed because of lack of financial resources. The most probable scenario predicts that market will face an oversupply near 18 million MT in 2 years (2).

10) Elimination of **fuel and energy subsidies**: government pays notable share of energy and fuel costs in the form of indirect subsidies. Because of population growth and increasing rate of energy and fuel consumption, government is going to eliminate these subsidies in a step by step subsidy reduction program. This elimination will cause an increase in both production and transportation costs. The former can mainly affect those factories which use old technologies and the latter will reduce the feasible transportation radius. A study by CIDCO shows that assuming prices and technology unchanged, profitability of a typical cement company will decrease about 80% if fuel and energy subsidies are eliminated completely.
5) Data Analysis

<table>
<thead>
<tr>
<th>Items</th>
<th># of respondent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination of fuel and energy subsidy</td>
<td>10</td>
</tr>
<tr>
<td>Oversupply</td>
<td>8</td>
</tr>
<tr>
<td>Elimination of price and distribution barriers</td>
<td>7</td>
</tr>
<tr>
<td>Construction and renovation in neighbor countries</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 8: Major driving forces of Iran’s cement industry

5-5) Key Success Factors

To extract cement industry KFSs, interviewees were asked to mention some factors which differentiate successful competitors from unsuccessful ones. For cross checking and also finding some maybe ignored factors they also were asked to define some performance measures for a typical cement company. After summarizing the results of interviews and omitting common items, finally 12 items were identified. Each one was scored according to the number of respondents who mentioned them as a KSF. Then they were sorted descending and those which had a score more than five were chosen as the industry KSFs.

1) Investment in R&D and manufacturing of cement downstream products: In near future, due to oversupply of cement by Iranian producers, the competition would be fierce; so marketing and sales of cement products is easier meanwhile these products produce more value added and can be more profitable than cement.

2) In most of cement factories, Human resources productivity is lower than it can be. Since cement is a kind of commodity, and there is a global price war in this industry, it is necessary for cement companies to improve this measure in order to remain competent in future.

3) Energy Productivity: one of the major determinant factors of COGS in cement factories is energy cost. Nowadays cement factories enjoy advantages of subsidized energy, and it accounts as a competitive advantage against foreign producers. But the trend of liberalization and governments
5) **Data Analysis**

attempts for joining WTO will change the situation and it is a must to have a high degree of productivity in energy consumption.

4) **Quality standards:** Due to excess of demand over supply, factories don't pay enough attention to quality standards, but it could not be continued in future, since there will be cement oversupply in near future, producer have to consider quality and meet the minimum quality requirement in order to survive.

5) Cement factories should have a high rate of **capacity utilization**, more than 95% of their nominal capacity and their minimum annual capacity for being profitable in 2 million MT.

6) **Raw materials** are very important in product quality, product differentiation, energy consumption, and finally COGS of products. For example production of special oil well or marine cements require certain kinds of mine. This factor is not applicable for the established factories, but for new factories, choosing a good raw material mine should be considered as a main determinant in factory locating. For established factories effective management of mineral extraction can be considered as a KSF.

7) **Market closeness:** Since loads of cement are heavy and need voluminous containers for transportation, transportation cost is a notable part of consumer price. Studies have shown that feasible transportation radius for cement is 200 kilometers (*J. Sarrazin / Lafarge / OECD meeting — February 19, 2002, BidAbabd*). It also must be considered that in next few years the government subsidy on fuel will be eliminated and transportation costs will increase. So, closeness to the target consumers is an important factor for being competitive.

8) **Brand recognition:** As an important factor in marketing like other products, having strong brand recognition can help the companies gain a notable market share. Because cement is a commodity, building a brand image is much harder than it in other products. It seems that a way to brand building is to develop to cement downstream products.

9) **Human resources skills:** These skills can have influences on increasing the quality of outputs and reaching to higher capacity utilization.
5) Data Analysis

Since most factories have under construction development projects, they have to think about recruiting operational personnel.

10) **Management skills**: As a general rule, Iran suffers a lack of competent managers; since ownership and management are not usually separated in Iran; professional management has not been shaped properly. So, it’s necessary to invest in developing management capabilities by educational programs. Paying attention to the market trends toward excess of supply over demand, the future managers should be more marketing-oriented than technical-oriented.

11) **Systems**: The usage of operational and management systems has been inevitable in all industries. In cement industry maintenance systems and quality management systems have higher degree of importance. A maintenance system plays a crucial role in decreasing machinery damages and increasing capacity utilization.

12) **Environmental issues**: Cement factories are one of the industrial pollution sources. Although some pollution standards have been considered in designing and constructing of some of new factories, they can not conform to global standards.

<table>
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<tr>
<th># of respondent</th>
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*Table 9: Key success factors of Iran’s cement industry*

In identifying key success factors, it was necessary to assess the relative importance of the key success factors. So, after finishing interviews and identifying main KSFs, in several phone conversations, interviewees were asked to weigh these 5 KSFs. The results are shown in Table 10.
### 5) Data Analysis

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<th>I2</th>
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<td>.06</td>
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*Table 10: The weight of key success factors*

Then for each item the average of scores was calculated and was considered as the weight of that item. Table 11, shows the final weights of the factors.

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
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<td>Capacity utilization</td>
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<tr>
<td>Market closeness</td>
<td>0.15</td>
</tr>
<tr>
<td>Downstream products</td>
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</table>

*Table 11: Relative importance of cement KSFs*

### 5-6) Typical strategies

As a part of interviews, interviewees were asked to explain their views about the most effective general strategies in Iran's cement industry. Answers were interesting; for the first question of this part about Porter's strategies almost all of them mentioned that overall low cost leadership strategy is the winning strategy.

Some of them mentioned differentiation as an effective strategy but when they went through details it appeared they were talking about cost leadership not differentiation. They suggested producing a new product, because its composition decreased the cost of production.
5) Data Analysis

Some methods mentioned for realizing this strategy were using alternative fuels like trash which simultaneously cleans the environment and reduce costs, using waste gases for generating electricity, outsourcing activities, and concentrating marketing and advertising at holding level.

**Forward integration:** majority of interviewees mentioned that forward integration can be one of the good strategies for cement companies. Because construction industry of Iran is not developed and use outdated method of construction; there are plenty of opportunities in developing new cement-based materials for construction industry. Production of these materials

**Merger and acquisition:** The interviewees believed that merging with international companies is very useful. Their management knowledge, marketing, and technological capabilities will help Iranian companies in optimization of their activities. They also point out that even merger of Iranian companies have some advantages like sharing the same maintenance team, and decreasing overhead costs like advertising, and R&D.

**Outsourcing:** The interviewees believed that although outsourcing cannot be considered as important as previous two strategies but there are some good opportunities to outsource some activities like quarry extraction or machinery maintenance. They generally recommended outsourcing because of labor regulations which makes firing of employees very hard and expensive.
6) Findings and conclusion

This section is going to summarize the results of the research and present it in a form of a strategic planning model. As mentioned before cement industry in Iran is considered as a strategic industry and throughout past years large amount of money has been invested in it and many under construction projects are in progress.

During last five years the industry has been experiencing lack of supply and government has been trying to solve the problem by pricing and rationing. It is predicted that the situation will change in next two years by finish of some in progress development projects. In next two years, total consumption of country will be about 52 million MT while total production will be about 70 million MT. That means near 18 million MT oversupply in this industry.

Other than oversupply issue, some fundamental changes in economy structure and transition from a closed economy to an open economy will change the competition rules. Changes like elimination of subsidies and other government supports which negatively influence the cost of product; and changes like elimination of pricing and distribution barriers which positively affect profitability of the industry.

It seems that considering this collection of change factors with contradictory effects; cement companies have to think again about their strategies and develop their new strategies. They have to believe in a paradigm shift which is happening from a production-oriented industry to a customer-oriented industry; and prepare themselves to meet the requirements of new competition era. This change is not straight forward, especially when most of these companies even don't have marketing
departments. They don’t feel like they need it because they don’t have enough capacity to meet their current demand.

In this research in a field study, by gathering experts' opinions, author tried to customize a basic planning model for a typical Iranian cement company. The basic model, as shown in following picture, had three main phases: 1) Situational Analysis, 2) Setting Strategic Direction, and 3) Strategy Development. Following figure shows the structure of a generic strategic planning model extracted from literature. Modifications are categorized in "industry and competitive analysis", "evaluating company resources and competitive analysis", and "identifying strategic options".

6-1) Industry and competitive analysis

As mentioned before in Conceptual Framework chapter Thompson (7) suggests 7 questions to be answered in this stage of situational analysis.
Questions 1, 3, 6 were the research questions. The answers of research questions change this step in following way:

In question 2, Thompson explains Porter’s 5F framework for the purpose of industry and competitive analysis. The first question to be answered is determining the limits of competitive environment. Whether it should be considered local, regional, or global? Since cement industry is a local industry and feasible transportation radius is less than 250 kilometers, in its industry analysis it needs not to consider all factories all around country. This characteristic is important especially in Iran which is a vast country with 30 provinces and an area of 1.600 million square kilometers. So, a company’s competitive environment border is influenced by the nature of cement industry.

Being a local industry is one of the industry’s dominant characteristics. Thompson (7) in page 80 of his book has mentioned strategic importance of
other similar characteristics. Considering the dominant characteristics of Iran's cement industry, the effects of them have been shown in Figure 14.

The result is Porter's five force framework with a few modifications. This framework can show a perfect static picture of an industry but it's not enough for strategic analysis. A company should think about the factors which change the competition structure. That is what is called driving forces. Four driving forces were identified by experts' consensus in previous chapter. The cement company must analyze the effects of these four driving forces on its competitive environment. So, these driving forces have been added to competitive and industry analysis framework.

In question 4, Thomson discusses the strategic group mapping. He mentions that this analytical tool is useful for comparing the market positions of each firm separately or for grouping them into like positions when an industry has so many competitors that it is not practical to examine each one in depth. For two reasons this kind of analysis is not that useful if even applicable in Iran's cement industry. First, when a company assesses its competitive environment, deals with at most 5 to 6 competitors and needs not to use the advantage of grouping them. Second, almost all companies appeal to similar types of buyers, depends on identical technological approaches, and offer same products, and there is no suitable and useful base for such a grouping. So, this part of analysis is not necessary for a cement company.

Question 5 is related to identifying competitors' next strategic moves. For this stage, Thompson does not present a framework and makes some recommendations. One more thing that should be considered in Iran's cement industry is the role of holdings. As mentioned before there is a oligopoly in Iran's cement market and four major holding hold more than 70% of market share. That means, cement companies cannot analyzed stand alone and without paying attention to their parent company's strategy. So, the researcher suggests a two level analysis of rivals to get a better and more comprehensive understanding of competitors' strategies.

In question 7, Thompson asks company strategists to assess the industry outlook and decide whether industry and competitive conditions present
and attractive business opportunity for the company or whether the company's growth and profit prospects are gloomy. This outlook is shaped by factors which change the future of industry and of course the strengths of company to some extent. Assessing the strengths of company will be discussed in next section. Ten factors gathered as driving forces, could be a good start point for this analysis. It should be considered that change factors are not limited to these factors. These factors are general about the whole industry. Since for each company its competitive environment is determined individually, some new factors may be added to this list or their relative importance may change from one company to another.

6-2) Evaluating Company Resources

Previously mentioned in chapter five, in order to evaluate company resources and competitive capabilities, the following questions should be answered:

1) What are the company resource strengths and weaknesses and its external opportunities and threats?

2) Are the company's prices and costs competitive?

3) How strong is the company's competitive position relative to its rivals?

4) What strategic issues does the company face?

The first question uses an SWOT analysis to gain a better understanding of a company's situation. The main source of information for identifying opportunities and threats is industry and competitive analysis explained in previous section. To determine weaknesses and strengths, Thompson (7) suggests an assessment of company resources including skill and expertise, physical assets, human assets, organizational assets, intangible assets, and competitive capabilities.

For the second question, a strategic cost analysis should be performed. A strategic cost analysis involves comparing how a company's unit costs stack
6) Findings and conclusion

up against the unit costs of key competitors activity by activity, thereby pinpointing which internal activities are a source of cost advantage and disadvantage (7). So, the company needs a framework that makes such a comparison possible. This framework is the company’s value chain. This value chain basically is the same for an industry with some variation from firm to firm. The value chain of industry extracted from interviews and documents review is like Figure 15.

![Figure 15: value chain of Iran’s cement Industry](image)

The value chain differs from other industries mostly by its primary activities not supportive ones. Since cement is a commodity, after sales services are not meaningful for the product. Because of lack of supply, most companies don’t have marketing activities and marketing departments, but it will not remain the same and will change in near future. So, in current conditions the value chain doesn't have marketing and services element. But in less than two years, probably marketing will turn to one of the vital parts of the value chain. Details of operation inbound and outbound logistics is as depicted in Figure 15. In support activities, technology development is not a part of value chain because none of cement companies have invested on this part and these affairs are performed in holding level.

In third question for measuring company competitive position, company, and its rivals should be assessed on key success factors. This is a quantitative method in which each of company and its competitors are assigned a number between 1 (very week) to 10 (very strong). The weighted summation
of scores shows the overall strength rating of them. These KSFs and their weights were determined through the study and are as following table items.

<table>
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<th>Key success Factor</th>
<th>Weight</th>
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<td>Downstream products</td>
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*Table 12: Competitive assessment framework*

6-3) Identifying strategic options

It is obvious that every company should have its own strategy which has been tailored to its specific internal and external circumstances. Although it's impossible to introduce one winning strategy to be followed by competitors, by some evidence the space of strategic alternatives can be roughly determined. This study is going not to present a specific strategy but a space which more feasible solutions in. For identifying this space as mentioned before Porter's 5 generic strategies and cooperative strategies analysis were used and the results were presented in chapter 5.

From 5 generic strategies, the experts of the industry believed that overall low cost leadership should be followed. Thompson (7) mentions that this strategy is a powerful strategy approach in markets with many price-sensitive buyers. He counts following 7 situations as situations in which low-cost strategy works better:

1) Price competition among rival sellers is especially vigorous

2) The industry's product is essentially standardized

3) There are few ways to achieve product differentiation that have value to buyers.
6) **Findings and conclusion**

4) Most buyers utilize the product in the same way

5) Buyers incur low switching costs in changing from one seller to another

6) Buyers are large and have significant power to bargain down prices

7) Industry newcomers use introductory low prices to attract buyer and build a customer base

All the items except 6 and 7 are among industry's dominant characteristics. That means the experts' opinions correspond well theory.

They also mentioned merging and acquisition by foreign companies as a way to achieving international markets especially because of expanding markets of Iraq and Afghanistan. Merging by other Iranian companies and outsourcing some activities to have better opportunities for cost reduction. These strategies are described by Thompson (7) as strategies which are more successful in mature industries. Since cement industry is a mature industry in Iran, again it shows correspondence between experts' opinions and Theoretical framework.
References

37. UK University. [Online]
Appendices

Appendix 1: Greenly's strategic management process

Appendix 2: Interview guide

Appendix 3: List of companies participated
Appendix 1: Greenly’s strategic management process

- Analyzing The Environment
  - Internal audit
  - Operating environment
  - Remote environment

- Planning Direction
  - Mission
  - Objectives
  - Values and expectations

- Planning Strategy
  - Generate options
  - Evaluate options and select strategy

- Implementing Strategy
  - Organizational factors
  - Operational plans
  - Control systems
Appendix 2: Interview guide

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<td>Title:</td>
</tr>
<tr>
<td>Age:</td>
<td>Cement industry experience:</td>
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1) Dominant Economic traits

**RQ1:** What are the dominant economic traits of Iran's Cement Industry?

Industries differ significantly in their basic character and structure, industry and competitive analysis begins with an overview of industry's dominant economic features. It has several items. Some of them will be found through document study and the rest are going to be found through interviews.

**Interview Questions:**
1) To what extent can companies realize economies of scale?
2) To what extent have industry rivals integrated backward and/or forward?
3) What type of distribution channels is used to access consumers?
4) Are high rates of capacity utilization crucial to achieving low-cost production efficiency? What is the norm of the industry?

2) Driving Forces

**RQ2:** What are the major driving forces of Iran's Cement Industry?

All industries are characterized by trends and new developments that gradually or suddenly produce changes important enough to require a strategic response from participating firms. The most dominant factors which cause fundamental structure and competitive adjustments are called driving forces. While many force of change may be at work in a given industry, no more than three or four are likely to qualify as driving forces in the sense that they will act as the major determinants of why and how the industry is changing.

**Interview Questions:**
1) What changes in following areas may consider as a driving force:
   1) Economy
   2) Technology
   3) Politics
   4) Social
   5) Legal
2) Please choose the 4 most influential Driving forces, Assume you are able to question a clairvoyant, an accurate fortune teller, who will answer four questions related to your business a decade from now. What information would you seek? What are the most important unknowns?:

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3) Key Success Factors

RQ3: What are the critical success factors of Iran’s Cement Industry?
RQ6: What is the relative importance of key success factors?
RQ2: What performance measures can be used for evaluating the results of typical Iranian cement company?

An industry’s key success factors (KSFs) are those things that most affect industry members’ ability to prosper in the marketplace—the particular strategy elements, product attributes, resources, competencies, competitive capabilities, and business outcomes that spell the difference between profit and loss and ultimately, between competitive success or failure. KSFs by their very nature are so important that all firms in the industry must pay close attention to them—they are the prerequisites for industry success or, to put it another way KSFs are the rules that shape whether a company will be financially and competitively successful.

Interview Questions:
1) Based on previously stated information which KSFs related to each of following aspects are important in cement industry? What factors distinguish the winners from the losers in your market?
   1) Technology: .................................................................
   Manufacturing: .............................................................
   3) Distribution: .............................................................
   4) Marketing: ...............................................................
   5) Skills: ....................................................................
   6) Organizational capability: ...........................................
   7) Other: .................................................................

2) Please choose 5 KSFs which are more essential:
   (1) ................., (2) ................., (3) ................., (4) .............., (5) ..............

3) Which financial and non-financial measures can be applied in order to find out whether an Iranian cement company is successful comparing to its rivals or not?

4) Value Chain of Industry

RQ5: What does a typical cement company’s value chain look like?

Value chain is an analytical tool of strategic cost analysis. A value chain identifies the separate activities, functions, and business processes that are performed in designing, producing, marketing, delivering, and supporting a product or service. The chain of value-creating activities it takes to provide a product or service starts with raw materials supply and continues on through parts and components production, manufacturing and assembly, wholesale distribution, and retailing to the end user of the product or service.
Interview Questions:
1) What are the raw materials of a cement company and how they are supplied?
2) What are the cement production's process steps?
3) What is the distribution network like and what are its main players?
4) How inbound and outbound logistics affect the value chain?

5) Typical Strategies

RQ7: What are typical strategies which work well in the Iran's cement industry?
RQ8: What are the opportunities for vertical integration in cement industry?

Although a strategy is unique to its owner and there are as many strategies as companies, some generic strategies can be identified according to the characteristics of an industry.

Interview Questions:
1) Which of following strategies would be more effective in cement industry:
   1) Overall low cost leadership strategy
   2) Broad differentiation strategy
   3) Focused low-cost strategy
   4) Focused differentiation strategy
2) Based on your answer to the first question, which of the following strategies can be applied and how?
   1) Backward integration
   2) Forward integration
   3) Outsourcing
   4) Merger and Acquisition
   5) Strategic Alliances
Appendix 3: List of companies participated

Interviewees in this study:

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<td>CIDCO Holding</td>
<td>Strategy Analyst</td>
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<tr>
<td>Amir Kakuee Nejad</td>
<td>Kerman Cement Co.</td>
<td>Production Manager</td>
</tr>
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<td>Hamidreza Habibi</td>
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<td>Production Manager</td>
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<tr>
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<td>Shomal Cement Co.</td>
<td>Electricity department Manager</td>
</tr>
<tr>
<td>Abdollah Khani</td>
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<td>Financial Manager</td>
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